



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

November 15, 2012

REPLY TO THE ATTENTION OF:

Elliott G. Stegin, CEO  
Paradigm Minerals & Environmental Services LLC  
Estate of Chemetco, Inc.  
3754 Chemetco Lane  
Hartford, Illinois 62048

Re: Comments on Unprocessed Metal Bearing Materials Work Plan  
Chemetco Superfund Site in Hartford, Illinois

Dear Mr. Stegin,

The U.S. Environmental Protection Agency and the Illinois Environmental Protection Agency received the Unprocessed Metal Bearing Materials Work Plan on October 17, 2012. This plan addresses the work to handle and prepare for sale copper skulls and spills left at the site. Skulls and spills were generated by Chemetco when molten copper dumped from a ladle cooled. At this time we have questions and comments, and are requesting a response.

Enclosed with this letter is a list of specific comments and a mark-up of the proposed work plan. The themes are discussed herein. The unprocessed metal bearing materials (UMBM) addressed by this work plan need to be clearly distinguished from slag. We need clarification on whether Paradigm intends to mine the slag pile for the (ladle) skulls and spills rather than recover them from known locations. Paradigm must show that the UMBM is a product per Resource Conservation and Recovery Act regulations. No new regulated storage units can be created in the course of this work. The source segregation activities may be a source of fugitive dust emissions. Decontamination water has to be properly discharged, not accumulated on site.

Paradigm will need to submit a construction permit application(s) to the Illinois Environmental Protection Agency Bureau of Air, before entering a contractual agreement to purchase or rent equipment, so that they can determine if a permit is needed or not.

Thank you for submitting this plan. We look forward to the resolution of these points and to our meeting November 20, 2012 at 10 am. If there are any questions concerning the above, please do not hesitate to contact me at 312-886-8961.

Sincerely,

A handwritten signature in black ink, appearing to read "Michelle Kerr".

Michelle Kerr  
Remedial Project Manager

Enclosures

Copies via email:

- Steve Zuber, Paradigm
- Erin Rednour, IEPA
- Chris Cahnovsky, IEPA
- Scott Sievers, IEPA
- Jim Morgan, IAG
- Greg Sukys, USDOJ
- Tom Martin, USEPA
- Jorge Garcia, Estate of Chemetco
- Donald M. Samson, Estate of Chemetco
- Penni Livingston, Estate of Chemetco
- Tara Callahan, Bryan Cave
- Dan Nester, Bryan Cave
- Steve Poplawski, Bryan Cave

**Main document changes and comments**

**Page 1: Comment [A1]**

**Author**

Is UMBM treated as a "Scrap Asset" as defined in the Asset Purchase and Processing Agreement?

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This work plan does not pertain to or seek approval for sale of slag at the Chemetco site.

**Page 3: Comment [A2]**

**Author**

Set out the commitment that any company that MBM is sent to will provide a certificate of legitimate recycling.

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California Metals and Alloys Corp.

**Page 3: Comment [A4]**

**Author**

Metallo Chemique?

**Page 3: Comment [A5]**

**Author**

Please provide analytical results of the composition of the material proposed for sale.

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**Author**

This material needs to be described more precisely in terms of metals content and distinguished from the slag on the property; this work plan needs to specifically state that it doesn't apply to slag. What criteria/composition distinguish and define the "skulls" and "spills" ?

**Page 3: Comment [A7]**

**Author**

Can you elaborate on the process for generating these materials?

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We require more information on where these materials are located, what the basis is of thinking that these materials can be found at these locations, and Paradigm's intent on whether, or to what extent, you will dig into the slag pile to look for or recover these materials. If part of this plan is to search for these materials (as opposed to recover them in already known locations) this should be stated and described, and how this search, and any required disruption of the slag pile will be conducted in an efficient and environmentally safe and sound manner.

**Page 4: Comment [A9]**

**Author**

Showing that the material targeted to be sold is a "product" should be included here, otherwise new materials different from these subject to this work plan must be separately approved.

**Page 4: Comment [A10]**

**Author**

Such as what other materials and metal products ? This work plan is for and sale of materials that are specifically described in this work plan and not other different materials encountered on site. For example, the sale of slag shall not be sold under this work plan.

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How much of the pile will Paradigm have to dig through to get to the materials of interest? If it is Paradigm's intent to not dig into the slag piles, then this work plan should state this as a prohibited practice.

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Please provide a detailed description of this rinsing process.	
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No new slag piles shall be created in areas where there was no slag before.	
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Likely, Paradigm will need permits from the IEPA Bureau of Air before any of this equipment can be constructed on-site and operated. The Bureau of Air wants permit applications for the sources associated with this process.	
<b>Page 4: Comment [A15]</b>	<b>Author</b>
Non-MBM should be containerized for decontamination/disposal immediately. No new regulated units shall be created.	
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Is there a way to "rope off" Paradigm's work area on the slag pile?	
<b>Page 4: Comment [A17]</b>	<b>Author</b>
Can we see the planned traffic routes?	
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Paradigm needs to comply with a Clean Air Act regulations on the screen and sizing equipment.	
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What is the result of the classification; how does the material have to be shipped? What are the requirements associated with each? Paradigm needs to comply with them. What does "no significant levels" mean?	
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Regarding collecting solids and water, once the Processing Work Plan is approved this could be acceptable, but until then the plan should be to dispose of decon water and debris according to normal regulations.

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Until that time, Paradigm and/or the Estate shall control, collect, handle, store and dispose of all decon water and debris in compliance with RCRA and other applicable law.

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The last sentence of the second paragraph should be stated as an affirmative obligation if needed to contain and control fugitive air emissions or water discharges.

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Regarding collecting dry MBM and water, once the Processing Work Plan is approved this could be acceptable, but until then the plan should be to dispose of decon water and debris according to normal regulations.

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Please define "manageable weather conditions".

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Materials spilled or released that cannot be shipped as products are solid wastes and shall be handled as such consistent with RCRA.

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What waste does Paradigm anticipate generating under this work plan?

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Add information about compliance with the Clean Air Act.

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Waste materials cannot be accumulated to wait for processing if the Processing Plan isn't approved.

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Monthly, the Estate will report to U.S. EPA (with a copy to IEPA) a brief activity summary and material shipments for the prior month and totals to date, along with copies of sale contracts and all manifests for the prior month.

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After activities have ceased the storm water Best Management Practices will need to be removed and disposed.

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## **WORK PLAN FOR THE SALES OF CHEMETCO FACILITY ASSESTS**

### **UNPROCESSED METAL BEARING MATERIALS WORK PLAN**

**OCTOBER 16, 2012**

**Comment [A1]:** Is UMBM treated as a "Scrap Asset" as defined in the Asset Purchase and Processing Agreement?

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## SUBJECT

Unprocessed Metal Bearing Materials Work Plan

## PURPOSE

The purpose of this Work Plan is to document the handling, packaging and shipping of Unprocessed Metal Bearing Material Products ("UMBM") on the former Chemetco Site (the "Site") to purchasers approved by the U.S. Bankruptcy Court, Southern District of Illinois. This work plan provides solely for the bulk segregation and sale of commercially valuable UMBM. This work plan does not pertain to or seek approval for sale of slag at the Chemetco site.

This work supports the Estate and Paradigm's ongoing efforts to reduce the environmental impact at the site and realize the economic benefits as an interim measure pending the US EPA's approval of Paradigm's Process Work Plan, which details Paradigm's activities to process and sell metal bearing materials ("MBM") at the Site.

## COMMERCIAL STATUS

Over the past 3 years the following companies have purchased or expressed legitimate interest in purchasing MBM to recover ferrous and non-ferrous metals:

- CMAC;
- Interco Trading;
- Norddeutsche Affinerie A.G.;
- Becker Metals;
- Colonial Metals;
- Coleman Engineering and Metals; and
- Metalow.

**Comment [A2]:** Set out the commitment that any company that MBM is sent to will provide a certificate of legitimate recycling.

**Comment [A3]:** California Metals and Alloys Corp.

**Comment [A4]:** Metallo Chimique?

## CHARACTERIZATION OF MATERIAL

UMBM by nature at the Site are a collection of metals and metal compounds generated by former Chemetco process operations and related activities. These UMBM have high metal and metal compound content.

Considerable amounts of UMBM can be found throughout the Site, most notably in association with the slag piles. During its operation, the Chemetco Plant likely generated these UMBM by dumping material in process from the furnaces in an effort to maintain daily production rates, or by clearing products from process vessels while performing service, maintenance and repair. These UMBM exist in various forms and have been described as skimming, float, dross, and ladle-bottoms. Regardless of the description or etiology, the resulting furnace materials and products appear to have been placed in locations among various slag piles.

**Comment [A5]:** Please provide analytical results of the composition of the material proposed for sale.

**Comment [A6]:** This material needs to be described more precisely in terms of metals content and distinguished from the slag on the property; this work plan needs to specifically state that it doesn't apply to slag. What criteria/composition distinguish and define the "skulls" and "spills"?

**Comment [A7]:** Can you elaborate on the process for generating these materials?

**Comment [A8]:** We require more information on where these materials are located, what the basis is of thinking that these materials can be found at these locations, and Paradigm's intent on whether, or to what extent, you will dig into the slag pile to look for or recover these materials. If part of this plan is to search for these materials (as opposed to recover them in already known locations) this should be stated and described, and how this search, and any required disruption of the slag pile will be conducted in an efficient and environmentally safe and sound manner.

The UMBM range in size and shape and predominately consist of iron, zinc, lead, copper, and tin of varied proportions. Other metals and metal compounds are known to exist within these matrixes, including, but not limited to antimony, and nickel. The materials range in size from granular fines to large bulk materials, as described below:

- **Fines:** Generally means granular material < 1" in any direction
- **Standard Bulk:** Generally means material in a size range of  $\geq 1"$  to < 1' in any direction
- **Large Bulk:** Generally means material  $\geq 1'$ , some can be as large 6' in any direction



The target UMBM in this UMBM Work Plan are the standard bulk to large bulk UMBM. Smaller sized particles of copper slag that are less than 1" in size will be processed in accordance with Paradigm's Process Work Plan, once approved by EPA.

Other materials and metal products may be encountered during site activities and identified as UMBM as defined under this work plan. Any such UMBM found to be advantageous to sale as it exists on the Site and within acceptable market conditions will be source segregated and sold to recycling facilities under this UMBM Work Plan. Sale of these materials and products will continue as Paradigm's processing plant is under construction and operational, and until the material sources have been depleted or are otherwise no longer available.

## SOURCE SEGREGATION ACTIVITIES

UMBM source areas are the areas labeled as the yellow flags #1 and 2 on the aerial attached as Appendix A. The UMBM currently present in the sources areas in their current form are commercially valuable and do not need chemical processing to enhance their value. Although not requiring any chemical processing, some of this material may require some limited activities (such as rinsing and/or sizing) to enhance product quality, to overcome constraints and limitations of shipping containers and packaging, or to meet product specifications by agreement.

The following activities will be performed in the source areas at the site: sourcing and redistributing stockpiled UMBM into new stockpiles based on characterization and size; sorting non-MBM from those stock piles; and basic grading of UMBM for placement within the Product Staging Area. The Product Staging Area is labeled as the yellow flag #3 on the aerial map attached as Appendix A. Many of these activities and operations will be conducted outside, in the areas identified in Appendix A, and will involve the use of various types of powered construction and mining equipment appropriate to the task and conditions. This may include bulldozers, front-end loaders and similar equipment, as well as rotating and sorting equipment, screening devices, hoppers, and other conveyance and process systems. The work performed by these types of construction and mining equipment and associated material handling systems used in the segregation of UMBM, will also likely result in the culling and accumulation of associated non-MBM materials. The UMBM and non-MBM may be moved from one outside location to another outside location during On-Site segregation activities and sorting processes and allowed to accumulate into piles of various sizes or composition before further removal to additional staging areas.

Paradigm and the Estate will take efforts to minimize handling of non-MBM within the work areas, but such material may be moved from the area of operation and accumulated on the slag piles within appropriate distances of traffic flow to allow reasonable vehicle access and so as to not impede or obstruct work activities. In some cases the UMBM may require size reduction to better accommodate material handling, shipping container and packaging constraints and requirements placed by the receiving facility. When necessary, Paradigm and the Estate will employ dry or wet cutting methods to size UMBM. Dry materials resulting from these activities will be collected and placed in staging areas intended to be used within Paradigm's chemical processing operations. Any water used to rinse materials and products will be collected and placed into a containment tank or vessel.

UMBM will be staged in the Product Staging Area within the Process Material Staging Area either as bulk material or as bagged materials while awaiting product quality control and quality assurance analysis. Once Paradigm or the Estate confirms that UMBM meet all product quality control and quality assurance analysis, Paradigm or the Estate will cover the UMBM and store them on concrete inside the Domed Building, labeled number 4 on the map included at Appendix A.

## SCHEDULE

In general, daily activities will be conducted from 7AM to 6PM, Monday-Friday, but Paradigm and the Estate reserve the right to adjust the work schedule to accommodate business related activities (such as shipping schedules, operating contingencies, and weather conditions).

**Comment [A9]:** Showing that the material targeted to be sold is a "product" should be included here, otherwise new materials different from these subject to this work plan must be separately approved.

**Comment [A10]:** Such as what other materials and metal products? This work plan is for and sale of materials that are specifically described in this work plan and not other different materials encountered on site. For example, the sale of slag shall not be sold under this work plan.

**Comment [A11]:** How much of the pile will Paradigm have to dig through to get to the materials of interest? If it is Paradigm's intent to not dig into the slag piles, then this work plan should state this as a prohibited practice.

**Comment [A12]:** Please provide a detailed description of this rinsing process.

**Comment [A13]:** No new slag piles shall be created in areas where there was no slag before.

**Comment [A14]:** Likely, Paradigm will need permits from the IEPA Bureau of Air before any of this equipment can be constructed on-site and operated. The Bureau of Air wants permit applications for the sources associated with this process.

**Comment [A15]:** Non-MBM should be containerized for decontamination/disposal immediately. No new regulated units shall be created.

**Comment [A16]:** Is there a way to "rope off" Paradigm's work area on the slag pile?

**Comment [A17]:** Can we see the planned traffic routes?

**Comment [A18]:** Is the Domed Building going to be sheltered by then? (The final UMBM must be treated as a Product).



Shipments of UMBM could begin within 45 days of approval of this UMBM Work Plan and will continue until the material sources have been depleted or are otherwise no longer available.

## HANDLING, PACKAGING, SHIPPING:

Products will be bulk loaded into containers outside the dome building in accordance with customer specifications. The shipping/loading area is labeled with yellow flag #7 on the aerial map attached as Appendix A. If bagging is required, the existing bagging process will be located along the dock at the SW-southwest corner of the dome building.

Pricing is Freight on Board ("F.O.B.") Hartford and the buyers will be responsible for coordinating the shipping from the plant to the final destination. Paradigm will only be required to coordinate the packaging and loading of containers at the Site. When applicable, Paradigm will secure the product for shipment in accordance with United States Department of Transportation hazardous materials shipping procedures.

Paradigm and the Estate will utilize the following bulk containers, depending on the intending shipping method:

**Ocean Container (International):** If intended for transport via Ocean-Liner, the nature of the UMBM may require the ocean container to be lined with plastic sheeting with sealed doors. Upon completion of loading, the plastic lining will be overlapped and taped down. In an effort to eliminate or mitigate potential damage to the container or the plastic lining, large size UMBM may be placed in the container on top of smaller material using a portable ramp and a forklift or similar device and effect.

**Dump Trailer (Domestic):** For domestic shipments using open top trailers or containers, UMBM will be removed from their current locations, stockpile(s) and staging areas using construction equipment appropriate to the task and conditions present or similar equipment with the intention and capability to more evenly distribute bulk UMBM within containers. Upon completion of loading, the trailer or container will be covered and secured for shipment.

**Non-bulk Packaging:** Where smaller packaging is required (e.g., Gaylord cartons, Supersacks, or similar containers) packaging will be positioned on an impermeable material, (e.g., plastic sheeting to catch spills), and loaded by hand or using a portable hopper and a skid loader and sent to the 2-station bagger at the dock at the SW corner of the Dome Building, just NW of the Foundry Building. At that location the material will be deposited into the hoppers of the packaging equipment and then into the package. The package will be weighed, labeled and sealed for shipment. A forklift will be used to move the packages. A forklift and the concrete loading docks will be used to load box trailers or ocean containers with packages for shipment. Fugitive dust will be controlled.

**Storage:** Under ideal conditions and circumstances the intent is to load UMBM into containers as soon as it is ready for sale and as soon as Paradigm has an adequate amount of material to meet the size and number of containers available for shipping. However, if conditions and circumstances require it, bulk materials could be stored outside on an impermeable material and covered with plastic sheeting in the former Domed Building and packaged materials could be stored inside the former Receiving Building, if space is available.

## REGULATORY CLASSIFICATION

**RCRA:** By-product

**USDOT:** Determination to be made based on the following criteria:

**Shipment by vessel:**

USDOT Hazardous Substance, Class 9, UN3077, Group III, "Environmentally Hazardous Substance, Solid, NOS (Copper Furnace Cleanup Solids-copper slag solids)" [Note: Classification triggered by potential marine pollutant limit for presence of high level of fines containing soluble lead, applicable only to shipment by vessels.]

**Shipment other than by vessel:**

NOT a USDOT Hazardous Substance if no significant levels of fines are present or shipment is not in a vessel.

**Comment [A19]:** Paradigm needs to comply with a Clean Air Act regulations on the screen and sizing equipment.

**Comment [A20]:** What is the result of the classification; how does the material have to be shipped? What are the requirements associated with each? Paradigm needs to comply with them. What does "no significant levels" mean?



## POLLUTION PREVENTION

**Decontamination:** All equipment, tools, and the exterior of containers used in the UMBM Work Plan will be decontaminated in accordance with the Estate's Decontamination Procedure, dated January 29, 2008. Decontamination activities ~~shall be planned to~~ be performed within concrete bunkers located outside of the tank house and the former foundry building, (identified as flags #5 and 6 on the map attached as Appendix A). Both of these areas have access and egress points able to accommodate the entry of mobile equipment. They provide reasonably direct routes out of ~~transport lanes and away from Site activities.~~ These areas also provide concrete walls and partitions that serve to establish an element of containment. ~~The~~In the decontamination areas ~~the Estate and Paradigm shall will require the construction of, or the installation of~~ small partitions and ramps to contain materials resulting from decontamination efforts, and to prevent the migration and intrusion of storm water that may contain MBM. The concrete slabs that underlay and are immediately adjacent to these areas are expected to prove suitable to serve as staging areas, and for the placement of receiving containers such as roll-off boxes, and for the placement of collection tanks or other suitable containers for the collection of solids and water used in decontamination activities. ~~Once the Process Work pPlan is approved, Paradigm and/or the Estate may will~~ collect the MBM solids and potentially affected water and re-use -or process it in accordance with its Process Work Plan. ~~Until that time, Paradigm and/or the Estate shall control, collect, handle, store and dispose of all decon water and debris in compliance with RCRA and other applicable law.~~

**Comment [A21]:** Please indicate the transport lanes on the figure.

Pursuant to decontamination procedures, ~~Paradigm and/or the Estate shall establish~~ decontamination zones ~~will be established~~ for powered and process equipment, material containers, personnel and the associated personal protective equipment used to perform work. Two distinct forms of decontamination will be employed: dry (gross) decontamination and wet decontamination efforts. Dry removal is characterized by the use of dry mechanical or manual device assisted removal such as broom sweeping, brushing, scrapers or vacuuming. Wet removal is characterized by the use of fluids such as water and manually assisted or powered equipment such as pressure washers and hot water or steam cleaners. Reasonable discretion will be used as to whether the use of curtained partitions is necessary to further aid in the containment and control of resulting MBM and potentially affected water ~~collected.~~

**Comment [A22]:** Regarding collecting solids and water, once the Processing Work Plan is approved this could be acceptable, but until then the plan should be to dispose of decon water and debris according to normal regulations.

Additionally, satellite stations will be established near personnel entrance and exit points to collect and contain MBM at the site and to ensure that MBM are not transferred off-site or into areas not generally known to be affected by MBM intrusion. Either portable decontamination collection and containment or construction of low vertical walls will be used as containment berms and will be sealed with epoxy or rubber based paints. Portable containment berms will also be used to collect and contain wash water associated ~~with~~ wet brushing and cleaning of boots and similar articles, along with drum type containers with liners for the collection of expendable PPE such as paper suits and respirator cartridges. Dry MBM and water potentially bearing MBM will be collected from the activities in these satellite stations and placed into containers and will be transferred periodically for use in appropriate operating areas.

**Comment [A23]:** The last sentence of the second paragraph should be stated as an affirmative obligation if needed to contain and control fugitive air emissions or water discharges.

**Spills and Release Cleanup:** Work will be conducted only in ~~manageable weather conditions.~~ Any spills or releases of MBM will be cleaned up each day using brooms, shovels or vacuum systems. A determination will be made as to whether the materials cleaned up can be shipped or will be containerized and handled as hazardous wastes under RCRA. ~~Materials spilled or released that cannot be shipped as products are solid wastes and shall be handled as such consistent with RCRA.~~

**Comment [A24]:** Regarding collecting dry MBM and water, once the Processing Work Plan is approved this could be acceptable, but until then the plan should be to dispose of decon water and debris according to normal regulations.

**Comment [A25]:** Please define "manageable weather conditions".

**Containment:** All MBM products will remain in place until work starts under this UMBM Work Plan. Commercially viable products ~~subject to this wWork pPlan~~ will be recovered and staged, as discussed above, in the appropriate UMBM Staging Area ~~and as specified in this Work Plan.~~ All sealed containers of wastes, including hazardous waste, awaiting shipment will be stored in RCRA containers and staged for shipment in Waste Staging Areas identified as flag #4 on the map attached at Appendix A and managed according to RCRA.

**Fugitive Dust Emission Controls:** On-Site source segregation activities of UMBM, powered equipment, dry cleaning of concrete surfaces and similar activities may have the potential to result in fugitive dust emissions. ~~All efforts will be made to prevent visible fugitive dust emissions. When fugitive dusting is visually observed Paradigm shall employ reasonable discretion will be used to determine the use of and implement, if necessary, any~~ dust control measures, such as water spray, fogging, misting, and/or other dampening efforts ~~to prevent such visible emissions. To the extent possible and~~



consistent with the prevention of visible emissions, ~~which use of water~~ will be limited in volume to prevent run-off and unsafe working conditions.

## WASTE MANAGEMENT, ENVIRONMENTAL ISSUES AND REGULATORY COMPLIANCE

**Hazardous Waste** - All hazardous wastes will be properly characterized, contained, labeled, handled, stored and manifested according to RCRA.

**Non-Hazardous Solid Waste** - Any wastes generated will be properly characterized ~~via a hazardous waste determination~~ and disposed off-site in accordance with RCRA.

**Waste Staging Areas**- Waste Staging Areas, identified by yellow flag #4 on the aerial attached at Appendix A, will be established on the existing concrete slab areas in locations that allow for reasonable vehicle access, management of materials, profiling and collection into appropriate containers for off-site disposal or insertion into the appropriate parts of the Process Materials Staging Area for reuse in the Paradigm's processing operations detailed in Paradigm's Process Work Plan. While stored in the Waste Staging Area, the waste will be managed in accordance with RCRA.

**Transportation and Documentation:** All shipments of Product and/or Wastes will be in compliance with United States Department of Transportation regulations and standards as well as RCRA generator requirements. The Estate's RCRA generator ID will be used to generate manifests and ensure that appropriate placards are applied or otherwise displayed at the time of transportation of any hazardous materials, including transportation to an appropriate recycling or waste management facility. The signed generator and transporter copy of the manifest will be forwarded to the IEPA, while maintaining at the Site the fully executed originals. ~~Monthly, the Estate will report to U.S. EPA (with a copy to IEPA) a brief activity summary and material shipments for the prior month and totals to date, along with copies of sale contracts and all manifests for the prior month.~~

**Comment [A26]:** What waste does Paradigm anticipate generating under this work plan?

**Comment [A27]:** Add information about compliance with the Clean Air Act.

**Formatted:** Normal

**Comment [A28]:** Waste materials cannot be accumulated to wait for processing if the Processing Plan isn't approved.

## HEALTH & SAFETY

**Hazards** - UMBM products contains hazardous levels of non-ferrous metals and inorganic metal compounds, such as lead. When dry, UMBM can be dusty. Work around moving equipment is a safety hazard.

**Compliance** - All workers in contact with UMBM on Site will comply with OSHA regulations for exposure to lead, cadmium and nickel. All workers will also secure 40-hr HAZWOPER training certification and will participate in medical surveillance monitoring for lead and cadmium exposure.

**Personal Protective Equipment (PPE)** - Personal protective equipment (PPE) will be used throughout the various areas of operation. At a minimum, all persons wanting to gain access to the various areas of operation will be required to wear hard hats, safety glasses or alternate eye protection, and work boots or shoes with toe protection or similar ~~alternate~~ protective foot wear. Personnel performing work in the various areas of operation may be required to use additional PPE appropriate to the task and conditions present. It is expected that PPE best described as level C will be required. This may include the previously mentioned hard hats, safety glasses or alternate eye protection, long sleeve shirts and long pants, work boots or shoes with toe protection or similar ~~alternate~~ protective foot wear, and as appropriate, gloves, paper suits and ~~half-face~~ cartridge respirators. There may be some exceptions to these PPE requirements, such as equipment operators working within enclosed cabs or persons performing inspection related activities with very limited exposure potential.

**Storm Water Management-** ~~The Trustee and Paradigm shall ensure that Operations under this Work pPlan shall~~ comply with the Estate's current Storm Water Management Plan and the Facility's NPDES permit (number IL0025747). ~~The Trustee and Paradigm shall evaluate a~~ Access and egress points to the Site that ~~will~~ contain areas of operation ~~will~~

~~require evaluation and potentially and as a result of this evaluation, in the construction of; or the installation of, as appropriate~~ small partitions and ramps to contain materials resulting from decontamination efforts, and to prevent the migration and intrusion of storm water that may contain MBM. During transition, sand bags, gravel bags, temporary berms, and other devices ~~shall will~~ be placed at access and egress points.

**Security-** 24-hr security monitoring of the Site is provided by Estate personnel on work days, Monday through Friday, and the use of the Estate's 24-hr security camera monitoring system. All work will be conducted during daylight hours, Monday through Friday, or when Estate personnel are present for specially scheduled work on the weekends or holidays.

**Closure-** Upon completion of all work, ~~the Trustee and Paradigm shall issue~~ a Closure Report ~~will be issued~~ for this UMBM Work Plan with documentation on all shipments off-site, including sales of UMBM.

**Comment [A29]:** After activities have ceased the storm water Best Management Practices will need to be removed and disposed.



## UMBM WORK PLAN APPENDIX A

### Aerial Map of Operations



#### Points of Reference

- ① Fines Building
- ② Zinc Bunker
- ③ Crushing Building
- ④ Domed & Dis Building
- ⑤ Foundry
- ⑥ Tank House
- ⑦ Brick House
- ⑧ Maintenance Building
- ⑨ Administrative
- ⑩ Administrative
- ⑪ Receiving Building

#### Proposed Areas of Operations

- ① Bulk Segregation Nearly All of Zone B
- ② Bulk Segregation
- ③ UMBM Product Staging Areas
- ④ Waste Staging Area
- ⑤ Proposed Location for Decon Station
- ⑥ Proposed Location for Decon Station
- ⑦ Shipping Docks/Loading Area